

KY6802

20V Dual N-Channel Mosfet

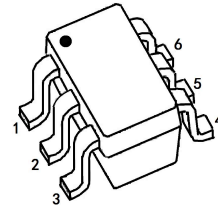
FEATURES

- $R_{DS(ON)} \leq 55m\Omega$ (42m Ω Typ.)
@ $V_{GS}=4.5V$
- $R_{DS(ON)} \leq 85m\Omega$ (60m Ω Typ.)
@ $V_{GS}=2.5V$

APPLICATIONS

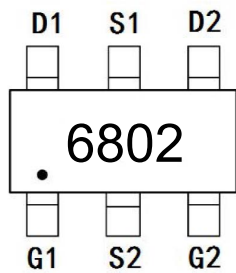
- DC - DC Converter
- Load Switch

SOT-23-6L



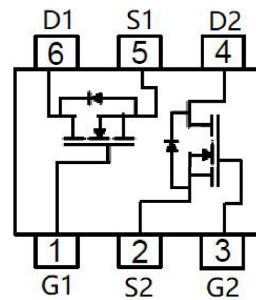
- 1: G1 3: G2 5: S1
2: S2 4: D2 6: D1

MARKING



6802:Device Code

N-CHANNEL MOSFET



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	20	V
V_{GSS}	Gate-Source Voltage	± 12	V
I_D	Continuous Drain Current	3	A
I_{DM}	Pulsed Drain Current	12	A
P_{tot}	Total Power Dissipation	0.83	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	150	$^{\circ}C/W$
T_J	Junction Temperature	150	$^{\circ}C$
T_{STG}	Storage Temperature Range	-55 to +150	$^{\circ}C$

KY6802

MOSFET ELECTRICAL CHARACTERISTICS $T_a=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 19V, V_{GS} = 0V$	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	$V_{GS} = \pm 12V, V_{DS} = 0V$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.4	0.7	1.0	V
$R_{DS(ON)}$	Gate Drain-Source On-State Resistance ^{note1}	$V_{GS} = 4.5V, I_D = 3A$	-	42	55	m Ω
		$V_{GS} = 2.5V, I_D = 2A$	-	60	85	
Dynamic Characteristics ^{note2}						
C_{iss}	Input Capacitance	$V_{DS} = 10V, V_{GS} = 0V, f = 1.0MHz$	-	240	-	pF
C_{oss}	Output Capacitance		-	45	-	pF
C_{rss}	Reverse Transfer Capacitance		-	22	-	pF
Q_g	Total Gate Charge	$V_{DS} = 10V, I_D = 3A, V_{GS} = 4.5V$	-	4.0	-	nC
Q_{gs}	Gate-Source Charge		-	0.4	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	0.6	-	nC
Switching Characteristics ^{note2}						
$t_{d(on)}$	Turn-On Delay Time	$V_{GS} = 4.5V, V_{DS} = 10V, R_G = 6\Omega, I_D = 1A$	-	5	-	ns
t_r	Turn-On Rise Time		-	10	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	24	-	ns
t_f	Turn-Off Fall Time		-	8	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS} = 0V, I_{SD} = 3A, T_J = 25^\circ C$	-	-	1.2	V
t_{rr}	Reverse Recovery Time	$V_{GS} = 0V, I_S = 3A, di/dt = 100A/\mu s$	-	-	10	ns
Q_{rr}	Reverse Recovery Charge		-	-	3	nC

Notes: 1. Pulse Test: Pulse width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

2. Guaranteed by design, not subject to production testing

Typical Characteristics

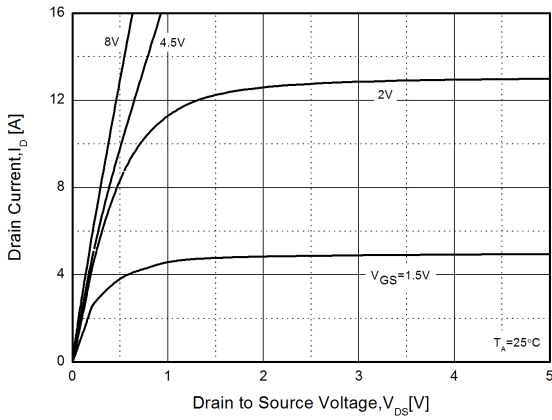


Figure1. Output Characteristics

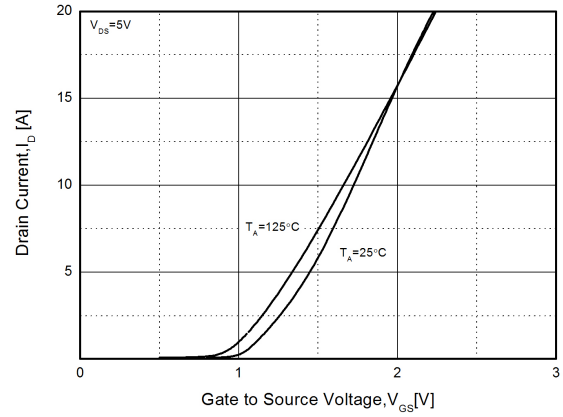


Figure2. Transfer Characteristics

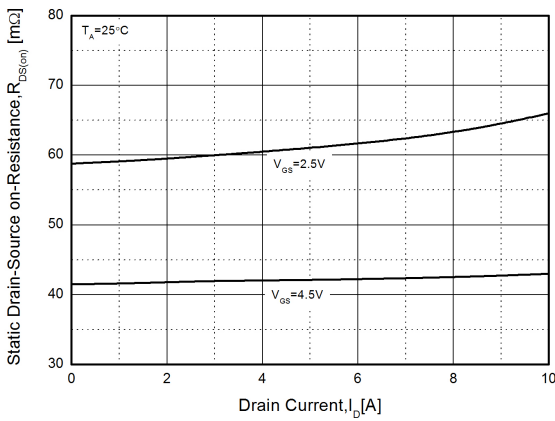


Figure3. Rdson-Drain Current

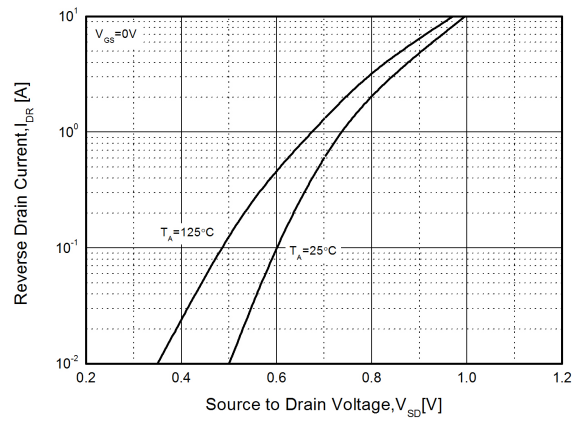


Figure4. Typical Source-Drain Diode Forward Voltage

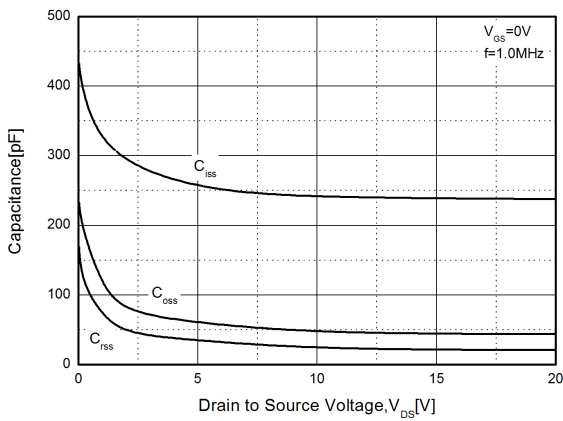


Figure5. Capacitance Characteristics

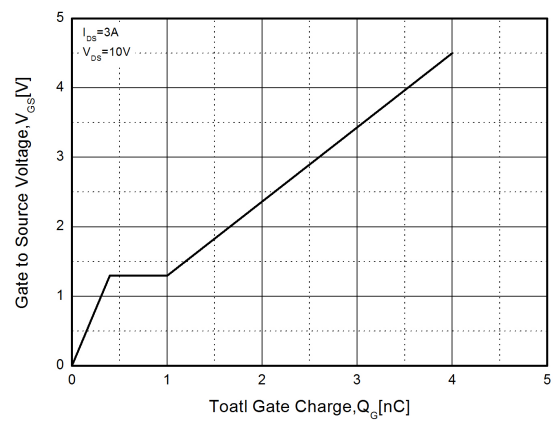


Figure6. Gate Charge

Typical Performance Characteristics (cont.)

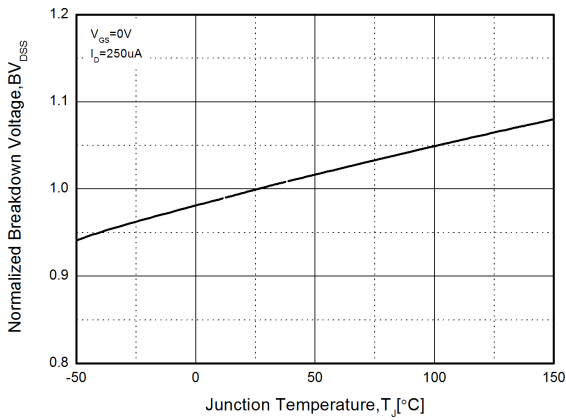


Figure7. Normalized Breakdown Voltage vs. Temperature

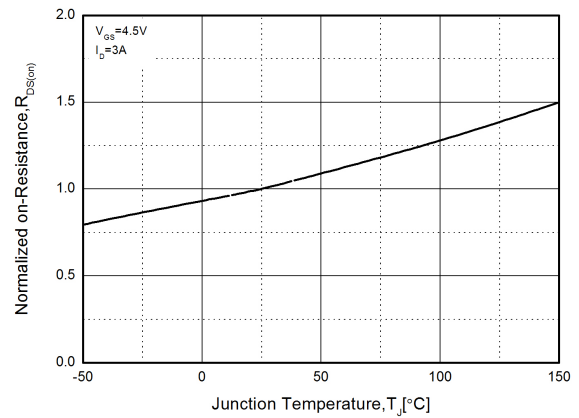


Figure8. Normalized on Resistance vs. Temperature

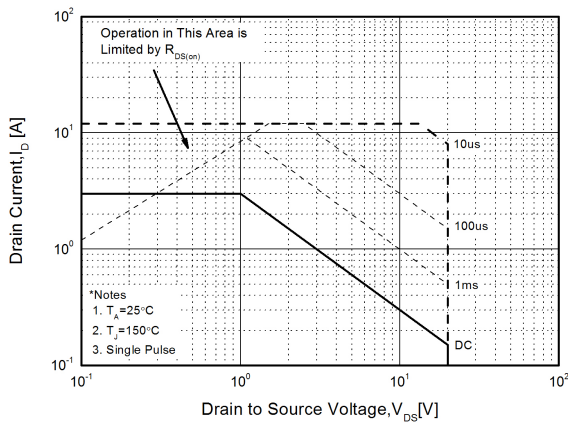


Figure9. Safe Operation Area

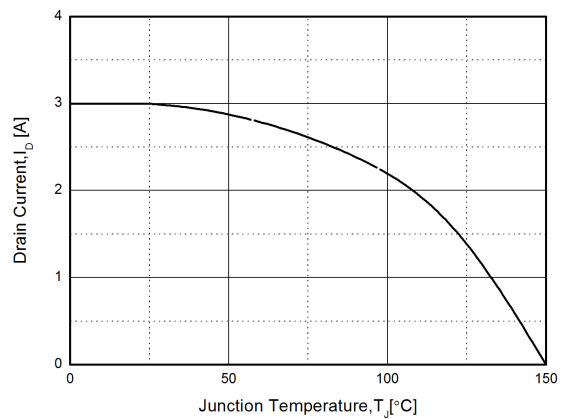


Figure10. Maximum Drain Current vs. Junction Temperature

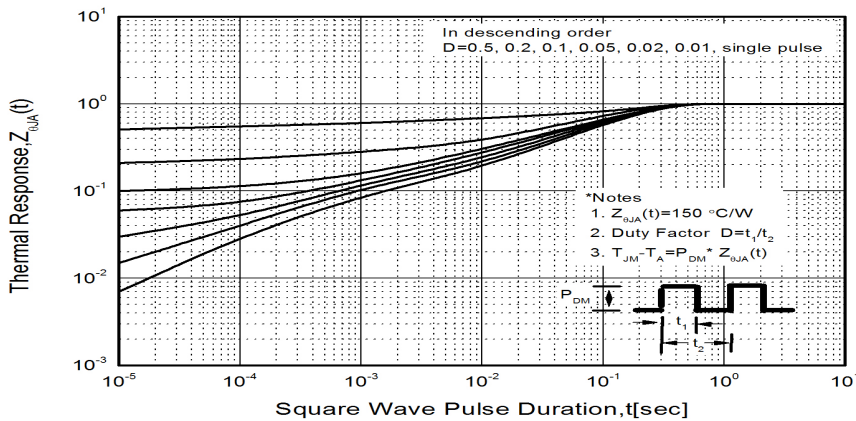
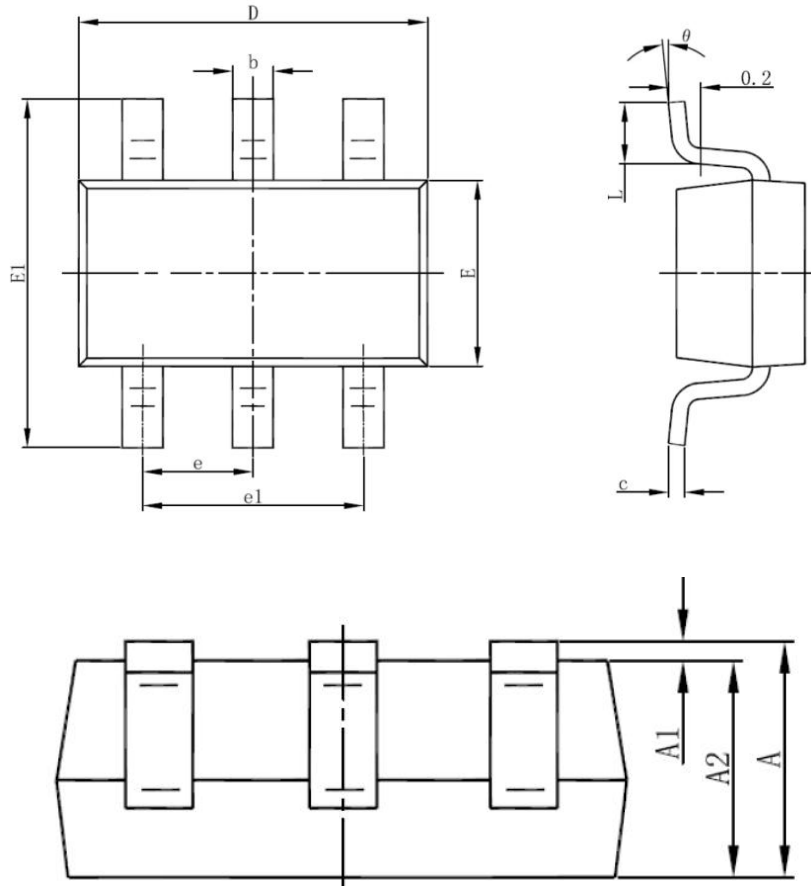


Figure11. Transient Thermal Response Curve

SOT-23-6L PACKAGE OUTLINE DRAWING


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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